

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 3-6, 8-11 are presently active in this case, Claims 1, 3, 5, 8 and 11 amended by way of the present amendment.

In the outstanding Official Action, Claims 3 and 5 were objected to for informalities; Claims 6, 8-9 and 11 were rejected under 35 U.S.C. § 112, second paragraph; Claims 1 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,532,211 to Rathonyi et al.; in view of the publication titled Efficient ARQ schemes for point to multiple point communications offered by Cam et al.; Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Rathonyi et al. in view of the publication titled RMTP: A Reliable Multicast Transport Protocol authored by Lin et al.; Claim 5 was rejected over Rathonyi et al., Lin et al. and Cam et al.; Claims 6, 8-9 and 10-11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Lin et al.; Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Rathonyi et al. in view of Lin et al.

With regard to the objections to the claims, Applicants have amended the claims to correct the informalities noted in the outstanding Office Action. Thus, the claim objections are believed to be overcome.

Regarding the claim rejections under 35 U.S.C. 112, second paragraph, Applicants traverse these rejections.

Regarding the rejection of Claim 6, the Office Action apparently questions whether this claim is intended to recite that the host station generates an ACK signal, because, in the Examiner's view, a plurality of ACK signals were already generated by the reception stations. Applicants submit, however, that generation of an ACK signal is in addition to the reception station ACK signals. Specifically, Claim 6 relates to FIG. 9 of the present

application, concerning “uplink site diversity”. As described in the specification relating to Fig. 9, the host station generates an ACK signal when receiving ACK signals from the plurality of reception stations (base stations) since it can be determined therefrom that the base stations have properly received the packets from the mobile station.

Rejected Claims 8, 9 and 11 also relate to “uplink site diversity” and are questioned by the Office Action based on generation of the ACK signal by other than the reception unit. Applicants first note that Claim 8 has been amended to clarify the claimed invention. Further, clarification of these claimed configurations is provided in the specification as follows. In claim 8, the mobile station confirms proper reception in the reception station, i.e., the host station, via the plurality of base stations (see the description concerning FIG. 10). For claim 9, the host station generates an ACK signal when receiving ACK signals from the plurality of base stations since it can be determined that the packets have been properly received by these plurality of base stations from the mobile station (see the description concerning FIG. 9). For claim 11, one of the plurality of base stations, each of which receives the packet from the mobile station and generates ACK signals to both the host and this mobile station, then receives a common ACK signal from the host station (see description concerning Steps 5132, 5133 and 5134 as well as 5117 and 5127 of FIG. 9).

By way of the above explanation and the amendments contained herein, Applicants submit that the rejection under 35 U.S.C. § 112, second paragraph, has been overcome.

Turning now to the merits, Claim 1 recites a communication method including “c) reporting from the reception station to the transmission station the reliability of the received packet, utilizing the ACK/NACK signal, wherein the NACK signal expresses at least two levels of reliability.” Applicants’ independent Claims 4 and 9 also recite that the NACK signal expresses at least two levels of reliability. An example of this scheme is shown in Table 1 of Applicants’ specification, which shows 7 levels as NACK(0) through NACK(6).

As discussed in the amendment filed August 23, 2004, the reporting of reliability information in this way provides numerous advantages over the conventional two level (ACK/NACK).

The cited reference to Rathonyi et al. discloses a communication device and method that uses a conventional ARQ mechanism to control retransmission of data packets. Col. 10 of Rathonyi et al., explains only a two-level (ACK/NACK) message sent from the receiver to the transmitter. The Office Action apparently acknowledges this point, but takes the position that a NACK signal generated from a retransmitted packet can serve as the second level of a previously sent NACK signal. For example, if a given packet has a transmission error resulting in a first NACK signal, and a retransmission of the packet has another transmission error resulting in a second NACK signal, the Office Action interprets the two separate NACK signals as a two-level NACK signal according to the present invention. Applicants respectfully submit that this is improper.

Specifically, Claims 1, 4 and 9 each recite “reporting from the reception station to the transmission station the reliability of *the* received packet, utilizing *the* ACK/NACK signal, wherein *the* NACK signal expresses at least two levels of reliability...” Thus, each of these independent claims makes clear that *a single* NACK signal having at least two levels is associated with *a single* packet. This is clear in other language throughout claims 1, 4 and 9. However, the Office Action’s interpretation overlooks the fact that claims 1, 4 and 9 recite the NACK signal expressing at least two levels of reliability with respect to a single packet of information. Rathonyi et al. simply does not teach this feature. Moreover, Rathonyi et al. seems to merely disclose the feature of “setting of reliability”, but is silent for “reporting reliability of a received packet” according to applicants claimed invention.

Still further, Lin et al. and Cam et al. are not cited for the NACK signal teaching of the claims, and thus cannot correct the deficiency of Rathonyi et al. In this regard, Applicants note that Cam et al. seems to merely disclose “combining packets when

transmission is not complete”, but is silent for “determining based on the reliability of the received packet whether or not this packet should be stored to be combined with a re-transmission packet” according to the present invention (see page 14, lines 2—16 for step 349 of FIG. 2). This provides an additional basis for patentability of applicants claims over the cited references.

For the reasons discussed above, Claims 1, 4 and 9 patentably define over the cited references.

According to claim 6, the plurality of reception stations generating ACK/NACK signals transmit them to both the transmission station and a host station of the plurality of reception stations. Claim 9 similarly recites that the reception station reports to both the transmission station and a host station of the plurality of reception stations in combination with the feature of the NACK signal having at least 2 levels of reliability. Still further Claim 10 and 11, similarly recite that the ACK/NACK signal is transmitted to both the mobile station and a host station. The feature of transmitting the ACK/NACK signal to both the transmission station (or mobile station) and the host station allows the host station and transmission stations to independently determine whether or not a packet error occurs, which provide improved communication speed. Further, re-transmission control is carried out finally by a mobile station as a result of bidirectional communication among the host station, the base stations and the mobile station (for claims 6 and 9, as shown in FIG. 9), and re-transmission control is carried out finally by a base station as a result of bidirectional communication (for claim 10 as shown in FIG. 11).

In contrast, Lin et al. discloses that feedback is made from receivers to only a sender (as seen in Fig. 2), or feedback is made from receivers to a sender via designated receivers (as seen in Fig. 3). Thus, Lin et al. does not disclose that the ACK/NACK signal is transmitted to both the mobile station and a host station. Further, it seems that the system of Lin et al. is

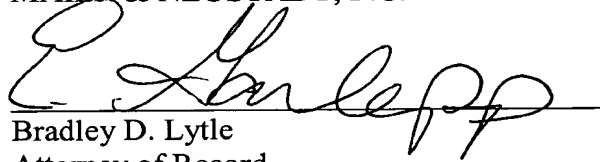
so simple that only the sender solely carries out re-transmission control by receiving the feedback signals. Thus, claims 6, 10 and 11 patentably define over Lin et al. Further, Rathonyi et al. and Cam et al. are not cited for the above noted limitations and thus cannot correct the deficiency of Lin et al.

For the reasons discussed above, Claims 1, 4, 6, and 9-11 patentably define over the cited references. Moreover, as Claims 3, 5, and 8 depend from Claims 1, 4, and 6 respectively, these claims also patentably define over the cited references.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application. The present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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